



U.S. Department  
Of Transportation

**Federal Highway  
Administration**

# Memorandum

6300 Georgetown Pike  
McLean, Virginia 22101

Subject: **ACTION**: LTPP Directive TDP-35  
Release of LTPP Traffic Analysis Software Version 1.4

Date: October 27, 2004

From: Debbie Walker *Debbie Walk*  
Long Term Pavement Performance Team

Reply to  
Attn of: HRDI-13

To: Dr. Frank Meyer, PM - LTPP North Atlantic Regional Contract  
Dr. Frank Meyer, PM - LTPP North Central Regional Contract  
Mr. Mark Gardner, PM - LTPP Southern Regional Contract  
Mr. Kevin Senn, PM - LTPP Western Regional Contract

Attached is the Long Term Pavement Performance (LTPP) Program Directive TDP-35. This directive authorizes implementation of the LTPP Traffic Analysis Software (LTAS) version 1.4. Instructions for installing the software are included in Attachment 1 and a complete list of the changes to the software is included in Attachment 2. Please make sure that all personnel involved with the traffic data activities are aware of this new directive.

Should you have any questions or would like to discuss this directive, please do not hesitate to call me at 202-493-3068.

Attachments (3)

# LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE



*For the Technical Direction of the LTPP Program*

---

<b>Program Area:</b>	Traffic	<b>Directive Number:</b>	TDP-35
<b>Date:</b>	May 19, 2004	<b>Supersedes:</b>	TDP-33
<b>Subject:</b>	<i>Release of LTPP Traffic Analysis Software Version 1.4</i>		

---

## **Purpose**

This directive discusses the executable and supporting table updates made to the LTPP Traffic Analysis Software (LTAS). It also includes a list of all changes made to the software since the release of version 1.3.1.

## **Changes**

This release addresses software functionality, Software Performance Reports (SPRs), miscellaneous items, and database modifications (see Attachment 2). As a result of the October 2003 training, additional changes were made to the software.

## **Distribution and Installation of New Software**

The updated software is available on the Technical Support Services Contractor's (TSSC's) corporate FTP site (<ftp://ftp.mactec.com>). The installation of the analysis software and support table elements to permit processing with the traffic data analysis software shall be completed by Friday, May 21, 2004. However, the new software will remain on the TSSC's FTP server until Tuesday, May 25, 2004. The login ID is "external client" and the password is "sen382" (all characters are lowercase). The software is in the folder `Outgoing\LTPP_LTAS_1_4`.

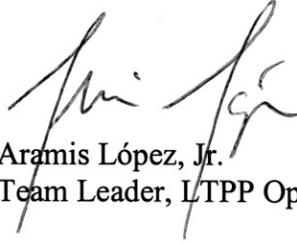
The attached table titled "Installing Traffic Analysis Software Version 1.4" lists the steps for installing the new release of the traffic analysis software (see Attachment 1). The installation information is also included with the software distribution. Due to changes in the way quad axles are binned, any weight data loaded after May 11, 2004 and prior to the installation of version 1.4 needs to be reloaded.

**Manual Revisions**

Revisions to the manual are posted on the TSSC's corporate FTP site until Tuesday, May 25, 2004. Several elements of Volume 1 (User's Guide) remain optional. They include Section 3 – Agency Packets and those sections marked provisional. No action is required of the Regional Support Contractors (RSCs) with respect to these sections.

Prepared by: TSSC

Approved by:



Aramis López, Jr.  
Team Leader, LTPP Operations

**ATTACHMENT 1**

The following table lists the steps for installing version 1.4 of the LTPP Traffic Analysis Software (LTAS).

**Installing Traffic Analysis Software Version 1.4**

<b>Step</b>	<b>Action</b>
1	Execute the script (as the DBA for the traffic instance) to update the codes in the TRAFFIC_CODES table.  <i>sqlplus dbaname/dbapwd@trfprod @Traffic_Codes_Update_1_4.sql</i>
2	Execute the script (as the DBA for the traffic instance) to update values for quads in the TRAFFIC_AXLE_WEIGHTS table and to add quads to stat_qc_a_ax possibilities.  <i>sqlplus dbaname/dbapwd@trfprod @axle_wt_table_mod_for_quads.sql</i>
3	Execute the script (as the DBA for the traffic instance) to update the values in the STAT_QC_BC_SPACE table for bins spc_bc_ct_09 and spc_bc_ct_25.  <i>sqlplus dbaname/dbapwd@trfprod @stat_qc_bc_space_update.sql</i>
4	Execute the script to update the TRAFFIC_DD table.  <i>Traffic_DD_Update_1.4.sql</i>
5	Execute the script to reset the record status for all admin tables to 'A.'  <i>sqlplus dbaname/dbapwd@trfprod @Update_Admin_RS.sql</i>
6	Execute the script to update records_status to 'A' and the fields to null in TRF_MONITOR_LTPP_LN as follows: <ul style="list-style-type: none"> <li>◆ if trucks_counted=0 then trucks_counted, est_trucks_ct, and count_days all should be null.</li> <li>◆ if trucks_weighed=0 then trucks_weighed, est_trucks_wt, weight_days, single_ax_est, tandem_ax_est, tridem_ax_est, quadplus_ax_est, single_ax_counted, tandem_ax_counted, tridem_ax_counted, and quadplus_ax_counted all should be null.</li> </ul> <i>sqlplus dbaname/dbapwd@trfprod @TRF_MONITOR_LTPP_LN_0_to_null.sql</i>
7	Rename the file SPR3454_Quad.tab to SPR3454_Quad.bat.
8	Execute the bat file from Step 7 (as the DBA for the traffic instance) at the command line prompt to: <ul style="list-style-type: none"> <li>◆ Dump the TRF_MONITOR_AXLE_DISTRIB table</li> <li>◆ Add a new column, weight_bin_size to the TRF_MONITOR_AXLE_DISTRIB table</li> <li>◆ Update/set the values of this field for the existing records</li> <li>◆ Make the new field a NOT NULL field</li> </ul> <i>SPR3454_Quad dbaname/dbapassword@trfProd</i>
9	Execute the script (as the DBA for IMS and traffic instances) to create the database links to the IMS instance for the Traffic user. These are required for the new Sheet 10 and Sheet 16 Reports.  <i>sqlplus /nolog @createIMSLink.sql dbausername/dbapassword@imsprod dbausername/password@trfprod trafficpassword imsprod</i>

**Installing Traffic Analysis Software Version 1.4**

<b>Step</b>	<b>Action</b>
10	Replace the analysis.exe on the server.  Use the updated analysis.exe located in the zip file Analysis_1_4.zip. Password is "version_1_4."
11	Replace the QC executable (TrafficAnalysisQC.exe) and the command file (TrafficAnalysisQC.cmd) with the TRF_MONITOR tables on the server. Password is "version_1_4."
<b>Note:</b> Changes to the software are in the Analysis Software Version 1 4.doc file.	

## **ATTACHMENT 2**

### **List of Changes**

#### **Software Functionality (Analysis.exe)**

- ◆ SPS Comparison Data screen includes the following functionality:
  - Prior
  - Next
  - Update Current
    - This function updates the COMP\_PERIOD\_FROM and COMP\_PERIOD\_TO fields. It does not replace the data set.
  - Add New
    - If data exists for a DATE\_COLLECTED\_FROM, this function replaces the data. However, if data does not exist, it creates a new COMP data set.
  - Delete
  - Review Logs
  - Close
- ◆ SPS Comparison Data set population – for LTPP lane only
- ◆ SPS QC and Reporting capabilities
- ◆ Implemented the following External Reports:
  - Monthly Statistics
  - Annual Summary Cover Sheet
  - Annual Summary – Class By Lane
  - Annual Summary – Weight By Lane
- ◆ Implemented the following new graphs:
  - Agency, 47, Monthly, Month by DOW
  - Agency, 47, Yearly, Year by DOW
  - Agency, GVW, Monthly, Month by DOW
  - Agency, GVW, Yearly, Month by DOW
  - Agency, GVW, Yearly, Year
  - Agency, Vehicle Distribution, Yearly, Year By Month
  - Agency, Vehicle Distribution, Yearly, Year By DOW (avg)
  - Agency, Vehicle Distribution, Yearly, Year By DOW (%)
  - Agency, Axle Distribution, Monthly, Month by DOW
  - Agency, Axle Distribution, Yearly, Year by Month
  - Agency, Axle Distribution, Yearly, Year
  - Agency, Axle Distribution, Yearly, Year By DOW
  - Agency, Axle Distribution, Multi Year, Years By Year
  - 13-Bin, 47, Monthly, Month by DOW
  - 13-Bin, 47, Yearly, Year by DOW
  - 13-Bin, GVW, Monthly, Month
  - 13-Bin, GVW, Monthly, Month by DOW
  - 13-Bin, GVW, Yearly, Year by DOW
  - 13-Bin, GVW, Yearly, Year
  - 13-Bin, Vehicle Distribution, Monthly, Month by DOW (avg)
  - 13-Bin, Vehicle Distribution, Yearly, Year By DOW (avg)
  - 13-Bin, Vehicle Distribution, Yearly, Year By DOW (%)

**Software Functionality (Analysis.exe)**

- ◆ Implemented the following new graphs:
  - 13-Bin, Axle Distribution, Monthly, Month
  - 13-Bin, Axle Distribution, Monthly, Month by DOW
  - 13-Bin, Axle Distribution, Yearly, Year by DOW
  - 13-Bin, Axle Distribution, Yearly, Year
  - 13-Bin, Axle Distribution, Multi Year, Years By Year
  - Stat QC, A Axle Weights, Yearly, Year
  - Stat QC, B-C Axle Spacing, Yearly, Year
  - Stat QC, B-C Axle Weights, Yearly, Year
- ◆ Implemented Print Option on the Main screen and the initial graphic screen:
  - Option for portrait or landscape printing
  - Option for 1-page up or 4-page up (applies only to graphs)
- ◆ Added to Graphs:
  - “Previous” and “Continue” buttons
  - Checkbox for newly specified graph: Agency, 4-card/7-card, Yearly, Year by Month by Day of Week
- ◆ Added “Previous” and “Continue” buttons to Data Reporting
- ◆ Implemented the external Sheet 10 Report which reports data from IMS and Traffic
- ◆ Implemented the Sheet 16 Report which reports data from IMS

**NOTE:**

Implementing the Previous / Next / Continue option keeps each graph after being generated in memory. A significant amount of memory is needed if many graphs are selected (generated), thus slowing down the displaying of graphs as more graphs are generated. There is a possibility that all of the memory may be used up.

Once a graph is generated, it is in the list and accessible by Previous / Next. To generate the next graph, select the “Continue” button. The “Continue” button will be disabled when all the selected graphs are generated. Scrolling through the list of existing graphs is performed using Previous / Next. Selecting the “Close” button destroys the graphs and requires regeneration to view.

Also note if only one graph is generated, it is first displayed with the “Continue” enabled. The software does not know that it is the only graph until “Continue” is selected and processing determines that graph generation is complete. The graph (only graph) is then displayed with Previous / Next / Continue all disabled.

The Previous / Continue option may not be fully functional on the following graphs:

- ◆ Agency, Vehicle Distribution, Multi Year, Years By Year (%)
- ◆ Agency, Vehicle Distribution, Multi Year, Years By Year (avg)
- ◆ 13-Bin, Vehicle Distribution, Multi Year, Years By Year (%)
- ◆ 13-Bin, Vehicle Distribution, Multi Year, Years By Year (avg)

**SPRs Addressed**

- ◆ *SPR 3254.* QC ability by site / year for Daily, Monthly, Annual and SPS (Year is ALL for SPS).
- ◆ *SPR 3329.* Corrected problem with checks for equality in TrafficAnalysisQC.exe.
- ◆ *SPR 3357.* Updated Level E check for the field TRUCKS\_LTPP\_LN in the TRF\_MONITOR\_LTPP\_LN table from 120,000 to 125,000 in TrafficAnalysisQC.exe.
- ◆ *SPR 3364.* Addressed precision problem when populating the STAT\_QC\_BC\_SPACE for bin value.
- ◆ *SPR 3397.* Corrected QC processing in Traffic Analysis QC for TRF\_MONITOR\_AXLE\_DISTRIB E-101.
- ◆ *SPR 3401.* Added message to indicate if only error or purged data loaded in Daily Processing.
- ◆ *SPR 3402.* Corrected problem when only purge records exist and err\_wt table not being populated.
- ◆ *SPR 3413.* Added the message, “IMS Processing Accomplished” to the IMS Processing to indicate when the LTPP LN table populates but the AXLE DISTRIB table does not populate. This may occur when only class data is available.
- ◆ *SPR 3415.* Changed Level D QC to allow NULL for milepost.
- ◆ *SPR 3416.* Corrected processing to populate the field TRUCKS\_LTPP\_LN in the TRF\_MONITOR\_LTPP\_LN table even when class data does not exist.
- ◆ *SPR 3432 (1 NT-130)* Modified DayMaker processing to NOT flag 4+ Static Hourly Volume and 8+ Zero Hourly Volume as errors. These will continue in the DayMaker processing. Missing Hours will continue to flag as an error. Calendar days, or 24-hour days that cross calendar day boundaries require all 24-hours of data for a day (a record for each hour). For sites that have low or no truck volume, the equipment should generate a record for each and every hour with volume count of zero and should continue in the processing.
- ◆ *SPR 3434 TrafficAnalysisQC.exe.* Added vehicle class to selection criteria for TRF\_MONITOR\_AXLE\_DISTRIB-E-101 and addressed non-null field issues.
- ◆ *SPR 3441 (4-464).* Modified selection of data for the Missing Data Report to address matching section ids to project ids for SPS sites.
- ◆ *SPR 3454.* Added the field WEIGHT\_BIN\_SIZE to the TRF\_MONITOR\_AXLE\_DISTRIB table, script to update existing records with values listed below, and modified code to populate the new field.

<u>Axle Group</u>	<u>Value</u>
Single	1000
Tandem	2000
Tridem	3000
Quad	*

\*Between 24-OCT-2002 and 11-MAY-2004 = 4000

\*Before 24-OCT-2002 (Oct 23) and after 11-MAY-2004 (May 12)= 3000

- ◆ *SPR 3464.* Added TRF\_MONITOR\_AXLE\_DISTRIB E-104. Added QC for the new field, WEIGHT\_BIN\_SIZE in the TRF\_MONITOR\_AXLE\_DISTRIB table. (TrafficAnalysisQC.exe)

**Miscellaneous Items from User Training October 2003**

- ◆ Set the fields SPS\_COMP\_CL\_DATE and SPS\_COMP\_WT\_DATE to null and not to 01-JAN-1990 for Daily Processing.
- ◆ Changed QC of the DATA\_AVAILABILITY field in SITE\_EQUIPMENT\_INFO to accept 0 as a valid value.
- ◆ QC of TRAFFIC\_ANALYSIS\_TRACKER addressed errors E-105, E-106, and E-109.
- ◆ Corrected heading on axle years by year graph to include the range and not the initial year.
- ◆ Changed default for Vehicle Distribution for SPS data group to “Heavy Trucks.”
- ◆ Changed SPS/Agency drop lists for Vehicle Class, from “Heavy Trucks (6-13)” to “Heavy Trucks (6-20).”
- ◆ Removed “Average ESALs per truck” from the ESALs drop list.
- ◆ Added “GVW data does not exist prior to 1999 except for site processed by the LTQC and LTAS software” to graphic dialog boxes for SPS, Agency, 13-Bin and Stat QC.
- ◆ Changed report title from “Monthly Data Report” to “Month By Day of Week Report.”
- ◆ Removed the default report selection on the reporting screen.
- ◆ Corrected typos and spelling errors.

**Other Miscellaneous Items**

- ◆ Changed SPS graphs Vehicle Distribution Month and Month by Week to use “Heavy Trucks (6-20)” and not “Heavy Trucks (6-13)” to match the SPS/Agency drop lists for Vehicle Class. This was previously changed from “Heavy Trucks (6-13)” to “Heavy Trucks (6-20).”
- ◆ Daily, Monthly, Annual and SPS QC will report the State / SHRP / Year from the selection screen to the log.
- ◆ Added Upload IMS Class and Upload IMS Weight fields to the Reprocessing Report.
- ◆ Changed “GVW data does not exist...” to “STAT\_QC data does not exist...” on the STAT QC selection screen.
- ◆ Updated “Annual Estimate Statistics Report” to print a blank for Percent Trucks and Percent Unclass Counted when Days Class is zero, and to print a blank for Percent Unclass Weighed when Days WIM is zero.
- ◆ Modified Monthly Statistics Report to address problems identified during testing for WA (53) A800 2001.

**Database Modifications**

- ◆ Updated codes for SPS Comp data, QC, Reports, and Graphics in TRAFFIC\_CODES table.
- ◆ Updated values for quads in TRAFFIC\_AXLE\_WEIGHTS.
- ◆ Updated the TRF\_MONITOR\_AXLE\_DISTRIB table to add and populate the WEIGHT\_BIN\_SIZE field.
- ◆ Created database links to the IMS instance for Sheet 10 and Sheet 16 reports.
- ◆ Updated data dictionary with revised definitions for space and axle weight binning fields.